Department of Veterans Affairs

BANCROFT ARCHITECTS + ENGINEERS
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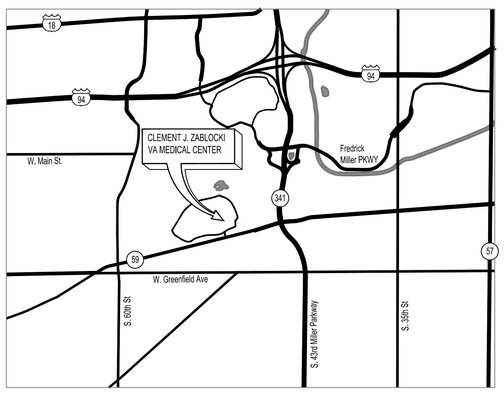
DESIGN DEVELOPMENT SUBMISSION (100%)
MARCH 02, 2015

CONTRACT #4

SHEET INDEX FOR 100% SUBMITTAL	
DRAWING #	**DRAWING TITLE**
G-000	COVER SHEET
ARCHITECTURAL	
A100	TRANSFORMER FLOOR PLAN - NEW
ELECTRICAL	
E001.4	ELECTRICAL SYMBOLS AND ABBREVIATIONS
ES101	PARTIAL SITE PLAN- ELECTRICAL
E100	PARTIAL BASEMENT FLOOR PLAN - ELECTRICAL
E101.4	TRANSFORMER VAULT FLOOR PLAN - XFMR 4
E701.4	PARTIAL ONELINE DIAGRAM - XFMR 4
E102	TRANSFORMER VAULT FLOOR PLAN - FINAL TRANSFORMER LAYOUT
E702	PARTIAL ONELINE DIAGRAM

CLEMENT J. ZABLOCKI VAMC
CHANGE TRANSFORMERS
5000 National Avenue
Milwaukee, Wisconsin 53705

LOCATION MAP



Revisions:	Date
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ISSUED FOR BID AND CONSTRUCTION	06/24/2015
100% SUBMITTAL	03/02/2015
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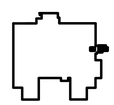
SITE PLAN:



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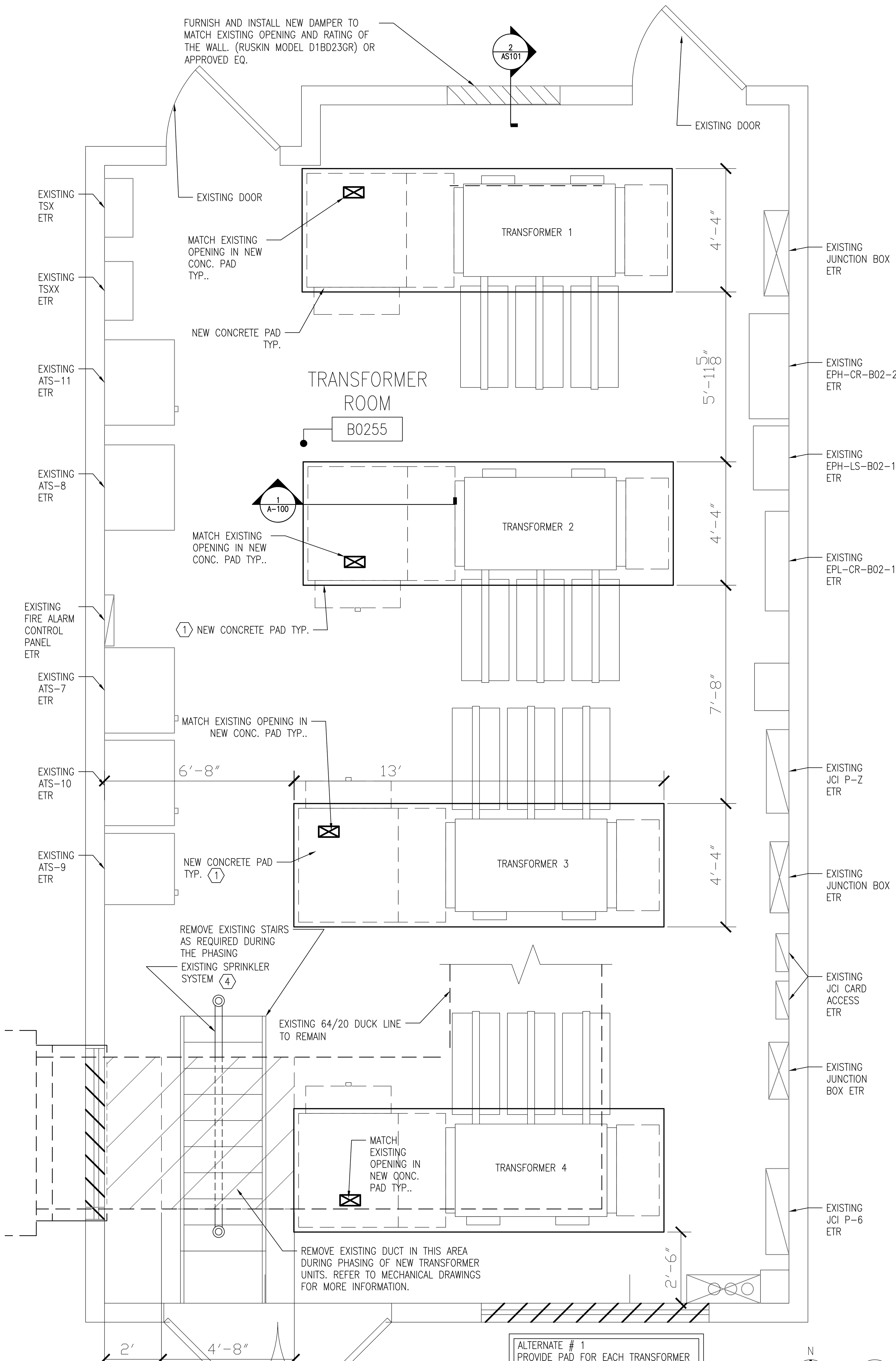
Jesse Brown Design IDIQ VA69D-14-D-0109
Bancroft-AE Project No. 14-101-002

Drawing Title: COVER
Approved: Project Director
Project Title: CLEMENT J ZABLOCKI CHANGE TRANSFORMERS
Location: MILWAUKEE, WI
Date: 06-24-2015
Checked: TS
Drawn: CM
Project Number: #695-14-140
Building Number: 111
Drawing Number: G-000

Office of Construction and Facilities Management
Department of Veterans Affairs

VA FORM 08-6231

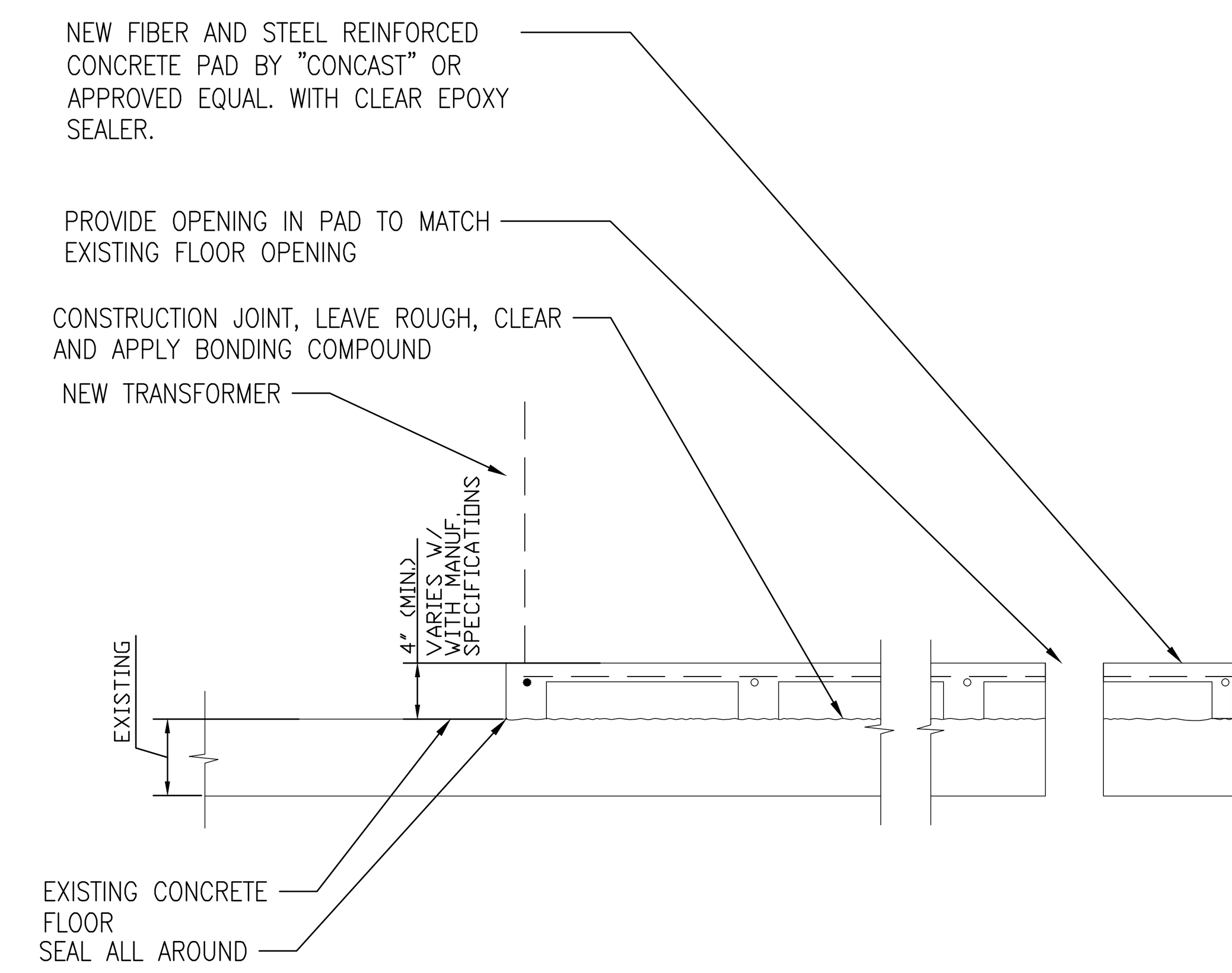
ISSUED FOR BID AND CONSTRUCTION



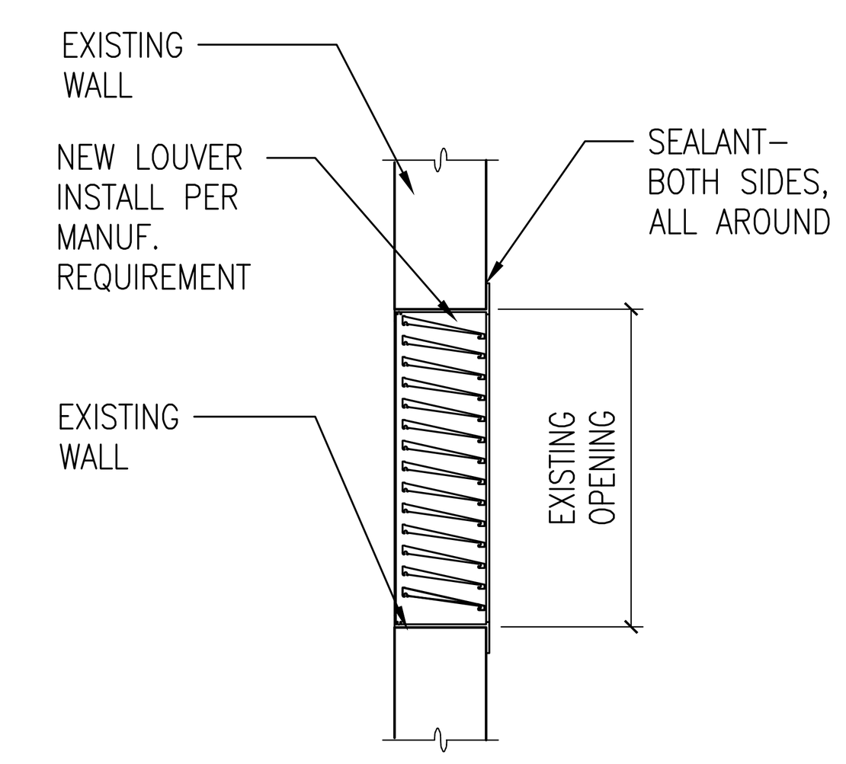
ALTERNATE # 1
PROVIDE PAD FOR EACH TRANSFORMER PER REQUIRED PHASES. REFER TO ELECTRICAL DRAWING FOR ADDITIONAL INFORMATION

N

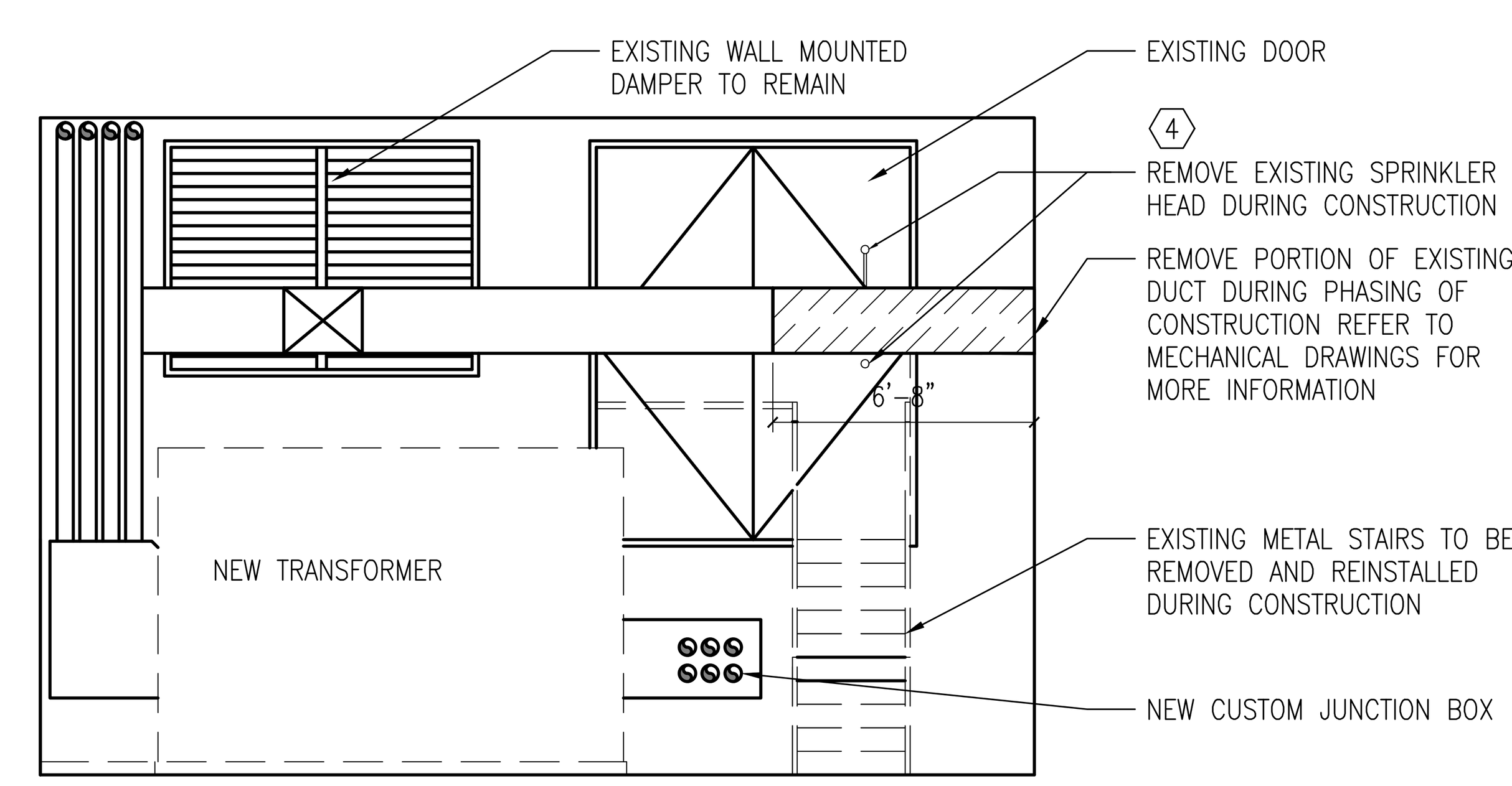
A TRANSFORMER ROOM - NEW FLOOR PLAN
1/2"=1'-0"



1 TYPICAL EQUIPMENT PAD DETAIL
1-1/2"=1'-0"



2 LOUVER DETAIL
3/4"=1'-0"



3 ELECTRICAL ROOM ELEVATION
1/4"=1'-0"

FLOOR PLAN GENERAL NOTES

A. ALL NEW CONSTRUCTION WHICH ENGAGES EXISTING SHALL BE JOINED IN A CAREFUL MANNER BEING PROPERLY ALIGNED AND MEMBERED SO AS TO LEAVE NO EVIDENCE OF PATCHING OR REPAIR.

B. CONTRACTOR SHALL REPAIR AND PATCH ALL EXISTING WALL CONSTRUCTION WHERE CRACKS, DENTS, HOLES OR OTHER IMPERFECTIONS HAVE OCCURRED. PREPARE SMOOTH SURFACE FOR NEW FINISH.

C. REPAIR ALL WALLS, FLOORS AND CEILINGS TO REMAIN WHERE DEMOLISHED WALLS, OUTLETS AND/OR OTHER ITEMS HAVE BEEN REMOVED, OR WHERE THEIR REMOVAL HAS CAUSED DAMAGE TO THE REMAINING ELEMENTS.

D. PROVIDE SILICONE SEALANT JOINTS AT JUNCTION OF ALL FLOOR PADS.

E. DO NOT SCALE DRAWINGS. USE THE GIVEN DIMENSIONS. COORDINATE ALL SHOP DRAWING REQUIREMENTS.

F. REFERENCE ELECTRICAL DRAWINGS IN ADDITION TO THE ARCHITECTURAL DRAWINGS IN DEFINING THE SCOPE OF WORK. SUBCONTRACTORS FOR EACH TRADE ARE ADVISED THAT INFORMATION PERTINENT TO THEIR WORK MAY OCCUR IN OTHER PORTIONS OF THE CONTRACT DOCUMENTS.

G. ALL CUTTING, CORING AND DRILLING OF EXISTING CONCRETE MEMBERS SHALL NOT DAMAGE EXIST. REINFORCING STEEL. PRIOR TO CORING VERIFY SIZE AND LOCATION WITH THE OWNER/COR AND OBTAIN A SUCCESSFUL REVIEW FROM THE STRUCTURAL ENGINEER.

H. PROJECT LIMIT LINES ARE SHOWN FOR ORIENTATION ONLY AND SHOULD NOT BE CONSTRUED TO BE COMPLETE. REFER TO OTHER DRAWINGS FOR UTILITY DEMOLITION AND NEW CONNECTIONS, ETC.

I. PROVIDE CUTTING AND PATCHING FOR ALL NEW WORK OUTSIDE OF PROJECT LIMIT LINES ARE REQUIRED. SEE ELECTRICAL. DRAWINGS.

J. IT SHALL BE THE RESPONSIBILITY OF EACH CONTRACTOR TO ADEQUATELY PROTECT EXISTING CONSTRUCTION AND FINISHES TO REMAIN IN PLACE DURING DEMOLITION AND CONSTRUCTION PHASES OF THE WORK. ANY DAMAGE TO SUCH AREAS SHALL BE RESTORED TO A "LIKE-NEW" CONDITION AS NOTED PRIOR TO THE OWNER'S ACCEPTANCE OF THE WORK.

K. ALL EXISTING BUILDING SERVICES THAT FEED OTHER SPACES OUTSIDE THE DEMISED AREA THAT ARE LOCATED WITHIN THE AREA OF WORK AND THAT INTERFERE WITH THE NEW CONSTRUCTION SHALL BE REROUTED AND RELOCATED AS REQUIRED TO MAINTAIN FULL SERVICE TO THE AFFECTED AREA.

L. THE CONTRACTOR SHALL LAY OUT AND CLEARLY MARK, DIRECTLY ON THE SITE AND FLOOR, THE FINAL LOCATIONS AND SIZES OF ALL WORKS AND FIELD REVIEW PRIOR TO THE INSTALLATION OF MATERIALS.

M. ALL FINISHED AREAS ADJACENT TO AND INCLUDED IN THE AREAS OF CONSTRUCTION SHALL BE PROTECTED FROM DUST AND DIRT THROUGH THE USE OF OWNER/COR APPROVED DUSTPROOF PROTECTION.

N. COORDINATE REMOVABLE OF THE STAIRS, SPRINKLER HEAD, AND DUCT WITH THE DEMOLITION CONTRACTOR.

N. ALL CONSTRUCTION TO REMAIN AFFECTED BY DEMOLITION SHALL BE PATCHED, AND PROPERLY ALIGNED SO AS TO LEAVE NO EVIDENCE OF PATCHING OR REPAIR. ALL ADJACENT FLOORS AND CEILINGS SO AFFECTED BY DEMOLITION SHALL BE PATCHED AS TO LEAVE NO EVIDENCE OF PATCHING OR REPAIR.

O. CONTRACTOR RESPONSIBLE TO PROVIDE CONSTRUCTION BARRICADES AND TRAFFIC SIGNAGE.

P. CONTRACTOR TO PROVIDE FLAG MAN DURING CONSTRUCTION HOURS.

Q. ALL TRENCHES SECURED AND COVERED AT THE END OF THE WORK DAY FOR THE USE OF DOCK PAD AREAS

R. LEVEL ENTIRE FLOOR WITH HIGH PRESSURE GROUT IN AREAS TO RECEIVE NEW PADS

S. CONTRACTOR TO VERIFY ALL NEW AND EXISTING PENETRATIONS. PROVIDE REQUIRED ENCLOSURE TO MEET RATING OF THE WALLS AND FLOOR.

⟨X⟩ KEY PLAN

1. FLAT "WAFFLE BOTTOM FLAT PAD" CONCRETE PAD SHALL BE BY CONCAST FIBERCRETE OR APPROVE EQUAL.
   SIZE: 13'-0"X 4-'4"
   TOLERANCE: SHALL NOT EXCEED +/-1/8".
   MANUFACTURE'S DESIGN DIMENSIONS AND WEIGHT MUST BE APPROVED BY ARCHITECT AND OWNER. PRIOR TO FABRICATION.
   VERIFY SIZE OF THE OPENING IN THE CONCRETE BY THE EQUIPMENT MANUF.
   THE FLAT PAD SHALL HAVE A RIGID, FLAT, AND STABLE TOP SURFACE. IF REQUIRED, THE FLAT PAD SHALL BE MANUFACTURED WITH EQUIPMENT BOLT-DOWN ACCOMMODATIONS.
   THE PRECAST COMPONENT ARE DESIGNED TO CONFORM TO REQUIREMENTS STATED IN ASTM C857-07 "PRACTICE FOR MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES.
   THE PAD SHALL OBTAIN A MINIMUM COMPRESSIVE STRENGTH OF 7500 PSI AT 28 DAYS OF AGE.
   STEEL REINFORCING WIRES SHALL CONFORM TO ASTM A496 AND A615.
   THE PAD MUST NOT WARP, RUST, BE UV DEGRADABLE, OR SUSTAIN COMBUSTION.
   REFER TO DETAIL 1/THIS SHEET FOR MORE INSTALLATION DETAIL.
2. PAD TOP FINISHES: CLEAR EPOXY SEALER.
3. CONTRACTOR RESPONSIBLE TO PROVIDE CONSTRUCTION BARRICADES AND TRAFFIC SIGNER.
4. REMOVE AND CAP EXISTING SPRINKLER HEAD DURING CONSTRUCTION PHASE. REPLACE SPRINKLER HEAD AND TEST PER MANUFACTURE REQUIREMENT .
5. CONTRACTOR TO VERIFY PROPER OPERATION OF EXISTING LOUVER AFTER EACH PHASE.

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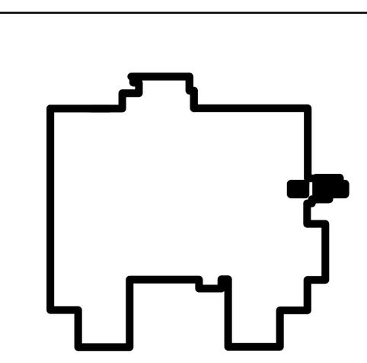

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Drawing Title: TRANSFORMER FLOOR PLAN - NEW
Approved: Project Director
Project Title: CLEMENT J ZABLOCKI CHANGE TRANSFORMERS
Location: MILWAUKEE, WI
Date: 06-24-2015
Checked: MSP
Drawn: MSP
Project Number: #695-14-140
Building Number: 111
Drawing Number: A100

Office of Construction and Facilities Management
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ISSUED FOR BID AND CONSTRUCTION

SYMBOLS LIST:

MOUNTING HEIGHTS FOR DEVICES AND EQUIPMENT TO BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE.

POWER:

XXX X — DUPLEX RECEPTACLE - MOUNTED 18" AFF UNLESS NOTED OTHERWISE

CIRCUIT NUMBER (SEE PLAN FOR PANEL BOUNDARIES) - TYPICAL

RECEPTACLE TYPE OR EQUIPMENT SERVED.

- (DD) DOUBLE DUPLEX
- (GFI) GROUND FAULT INTERRUPTER
- (WP) WEATHERPROOF WITH GFI RECEPTACLE
- (WC) WATER COOLER
- (REF) REFRIGERATOR
- (MW) MICROWAVE
- (TR) TAMPER RESISTANT
- (TV) MOUNTED ADJACENT TO TELEVISION
- (CM) COFFEE MAKER
- (IG) ISOLATED GROUND
- (SW) SWITCH TOP HALF
- (D) DEDICATED CIRCUIT
- (CL) CLOCK RECEPTACLE

XXX X — DUPLEX RECEPTACLE - MOUNTED 4" ABOVE COUNTERTOP OR COUNTER BACKSPLASH WHERE PRESENT.

FLOOR MOUNTED ELECTRICAL BOX SEE DRAWINGS FOR TYPES OF OUTLETS REQUIRED AT EACH BOX.

CIRCUIT NUMBER (SEE PLAN FOR PANEL BOUNDARIES) - TYPICAL

FLOOR BOX TYPE

- (F) FLUSH TYPE
- (P) POKE THRU TYPE

SPECIAL OUTLET- SEE SPECIAL OUTLET SCHEDULE

MOTOR CONNECTION - SEE MOTOR WIRING SCHEDULE

GENERATOR CONNECTION

MOTOR STARTER

XXX — INDICATES TYPE (MAN) - MANUAL (MAG) - MAGNETIC (COM) - COMBINATION

DISCONNECT SWITCH

FUSED DISCONNECT SWITCH

XX — INDICATES RATING

XXX — INDICATES SIZE

TRANSFORMER

JUNCTION BOX

CABLE TRAY

CT — INDICATES LOADING DEPTH (IN INCHES)

INDICATES LOADING WIDTH (IN INCHES)

GENERAL:

ELECTRICAL PANEL - SEE SCHEDULE

INDICATES DESIGNATION

DRAWING NOTE SYMBOL

(INDICATES DETAIL DESIGNATION)

SEE DETAIL SYMBOL

(INDICATES SHEET NUMBER)

CONDUCTOR QUANTITY IN A RACEWAY. NUMBERS INDICATE WIRE SIZES (AWG).

INDICATES PHASE CONDUCTOR

INDICATES NEUTRAL CONDUCTOR

INDICATES GREEN GROUND CONDUCTOR

ELEV. 70'-6" — MOUNTING HEIGHT TO CENTER LINE OF UNIT

ONE LINE SYMBOLS:

- DRAWOUT CIRCUIT BREAKER
- LOW VOLTAGE SWITCH
- LOW VOLTAGE FUSE
- XX/X — AMPERE RATING / CONNECTION #
- MEDIUM VOLTAGE CABLE TERMINATION
- PANELBOARD
- PROTECTIVE RELAY
- FEEDER CONTINUATION CONNECTION #
- FEEDER CONTINUED ON SHEET INDICATED
- DEVICE UPSTREAM OR DOWNSTREAM
- MOTOR - SEE WIRING SCHEDULE
- TRANSFORMER
- CURRENT TRANSFORMER
- DIGITAL METERING
- SURGE SUPPRESSION
- XX DENOTES LA = LIGHTING ARRECTORS TV = TRANSIENT VOLTAGE SURGE SUPPRESSION
- CAPACITOR
- CONTACTOR
- GROUND
- 52 DRAWOUT MEDIUM VOLTAGE AC VACUUM CIRCUIT BREAKER (VCB)
- KEY INTERLOCKING - KEY # KEY NORMALLY INSERTED
- KEY INTERLOCKING - KEY # KEY NORMALLY NOT INSERTED
- BYPASS ISOLATION TRANSFER SWITCH
- XXX ROOM NUMBER

FEEDER LEGEND:

1. ALL ITEMS INDICATED BY A DARK SOLID LINE ARE NEW.
2. ALL ITEMS INDICATED BY A LIGHT SOLID LINE ARE EXISTING TO REMAIN.
3. ALL ITEMS INDICATED BY A DASHED LINE ARE EXISTING TO BE REMOVED.
4. ALL ITEMS INDICATED BY A LIGHT DAS-DOT-DASH LINE INDICATE EQUIPMENT ENCLOSURES.
5. ALL ITEMS INDICATED BY A LIGHT DASHED LINE INDICATE FUTURE EQUIPMENT AND WORK.
6. ALL ITEMS INDICATED BY A DARK DASHED LINE INDICATE TEMPORARY EQUIPMENT AND WORK.

ANSI DEVICE FUNCTION NUMBER:

52 AC CIRCUIT BREAKER

63 RAPID PRESSURE RISE

ALARM & MONITOR POINTS LIST

LOCATION	POINT DESCRIPTION	GRAPHICS DDC (JCI)	POWER XPERT (EATON)	NO. OF POINTS
TRASNFORMER ROOM B0225	TRANSFORMER STATUS: LIQUID LEVEL, PRESSURE/VACUUM, COVER MOUNTED PRESSUE RELIEF DEVICE, WINDING TEMPERATURE AND RAPID PRESSUE RISE	X	X	5

NOTES:

1. THE TRANSFORMER SHALL BE PROVIDED WITH THE DESCRIBED ALARM CONTACTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE SYSTEM TIED INTO THE EXISTING FACILITIES INFRASTRUCTURE.

2. THE CONTRACTOR SHALL PROVIDE ALL JCI EQUIPMENT, CONDUIT, JUNCTION BOXES, SUPPORTS, WIRING, WIRING CONNECTIONS, BUILDING AUTOMATION SYSTEM POINTS, PROGRAMMING AND TESTNG REQUIRED FOR ALARM CONTACTS TO ANNUNCIATE IN THE GRAPHICS CENTER LOCATED IN BUILDING BUILDING 113.

3. THE CONTRACTOR SHALL PROVIDE ALL EATON EQUIPMENT, CONDUIT JUCNTION BOXES, SUPPORTS, WIRING, WIRING CONNECTIONS, GATEWAYS, SWITCHES, PROGRAMMING AND TESTING REQUIRED FOR ALARM CONTACTS TO ANNUNCIATE TO THE EXISTING EATON POWER EXPERT SYSTEM.

4. CATEGORY 5 ENHANCED UTP CABLE SHALL SHALL BE RUN IN CONDUIT FROM TRANSFORMER ROOM TO TELECOMMUNICATION ROOM FOR INTERGRATION OF POWER EXPERT MONITORING POINTS. CABLE SHALL MEET ANSI/EIA/TIA 568B.2-1 CAT 5e SPECIFICATIONS, 350MHz OR BETTER, NEMA LOW-LOSS EXTENDED FREQUENCY, PSUM CROSS TALK COMPLIANT.

4. THE CONTRACTOR SHALL PROVIDE A SOFTWARE UPDATE FOR THE MILWAUKEE VA'S EXISTING EATON POWER EXPERT SYSTEM, TO ENSURE THAT IT IS RUNNING THE NEWEST SOFTWARE AVAILABLE.

IN THE CASE OF CONFLICTS OR DISCREPANCIES WITHIN OR AMONG THE CONTRACT DRAWINGS, THE BETTER QUALITY, MORE STRINGENT REQUIREMENTS OR GREATER QUANTITY OF WORK, AS DETERMINED BY THE GOVERNMENT, SHALL BE PROVIDED.

ABBREVIATIONS:

ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AVAILABLE INTERRUPTING CURRENT
A/E	ARCHITECT/ENGINEER
ALT	ALTERNATE
ALT SW	ALTERNATOR SWITCH
ARCH	ARCHITECT
ATS	AUTOMATIC TRANSFER SWITCH
BFG	BELOW FINAL GRADE
BLDG	BUILDING
BPC	BOLTED PRESSURE CONTACT SWITCH
BKR	BREAKER
BOL	BUILT IN OVERLOAD
CATV	CABLE TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
CP	CONTROL PANEL
CS	COMBINATION STARTER
CSB	CABLE SPLICE BOX
CT	CURRENT TRANSFORMER
DE	DUAL ELEMENT FUSES
DIR	DIRECT
DISC	DISCONNECT
DN	DOWN
E	EXISTING
EC	ELECTRICAL CONTRACTOR
ELEV	ELEVATION REFERENCE
EM	EMERGENCY
ENT	ELECTRICAL NON-METALLIC TUBING
EMT	ELECTRIC METALLIC TUBING
EOL	END OF LINE RESISTOR
EP	EXPLOSION PROOF
ER	EXISTING TO BE REMOVED
ERL	EXISTING TO BE RELOCATED
ERLD	EXISTING RELOCATED
ETR	EXISTING TO REMAIN
EXIST	EXISTING
EWC	ELECTRIC WATER COOLER
F	FLUSH
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FDR	FEEDER
FIXT	FIXTURE
FLR	FLOOR
FLA	FULL LOAD AMPS
FLUOR	FLUORESCENT
FS	FLOW SWITCH
FVNR	FULL VOLTAGE NON-REVERSING
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT INTERRUPTER
GRC	GALVANIZED RIGID CONDUIT
GRD	GROUND
GYP	GYPSUM BOARD
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO SWITCH
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HV	HIGH VOLTAGE
HVAC	HEATING & VENTILATING - AIR CONDITIONING
HVC	HEATING VENTILATING CONTRACTOR
HW	HEAVYWALL
ID	INDIRECT
IL	INTERLOCK
IMC	INTERMEDIATE METAL CONDUIT
INC	NCANDESCENT
IU	IN UNIT
J-BOX	JUNCTION BOX
LG	LAY-IN GRID
LTG	LIGHTING
LV	LOW VOLTAGE
LVT	LINE VOLTAGE THERMOSTAT
MAG	MAGNETIC STARTER
MAN	MANUAL STARTER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUGS ONLY
MSB	MAIN SWITCHBOARD
MTD	MOUNTED
NIC	NOT IN CONTRACT
NU	NEAR UNIT
OU	ON UNIT
P	POLE
PB	PUSHBUTTON
PEND	PENDANT
PC	PHOTO CONTROL
PE SW	PNEUMATIC SWITCH
PLBG	PLUMBING CONTRACTOR
PNL	PANEL
R	RELAY
RAI	REMAIN AS IS
RE/CKT	RECONNECT TO EXISTING CIRCUIT
REC	RECESS
RECEPT	RECEPTACLE
RM	ROOM
RVS	REDUCED VOLTAGE STARTING
S	SPLINE
SEL SW	SELECTOR SWITCH
SP SW	SPEED SWITCH
SURF	SURFACE SW SWITCH
TC	TIME CLOCK
TCP	TEMPERATURE CONTROL PANEL
TCC	TEMPERATURE CONTROL CONTRACTO
TS	TAMPER SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UNIV	UNIVERSAL
USS	UNIT SUBSTATION
WP	WEATHERPROOF
XFMR	TRANSFORMER

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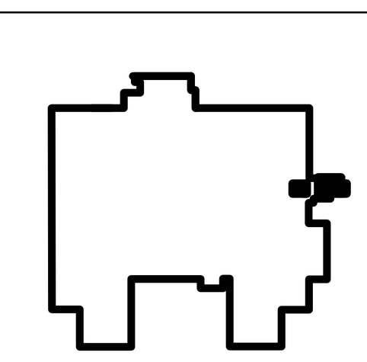

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Drawing Title: ELECTRICAL SYMBOLS & ABBREVIATIONS

Approved: Project Director

Project Title: CLEMENT J ZABLOCKI CHANGE TRANSFORMERS

Location: MILWAUKEE, WI

Date: 03-02-2015 | Checked: G+L | Drawn: G+L

Project Number: #695-14-140

Building Number: 111

Drawing Number: E001.4

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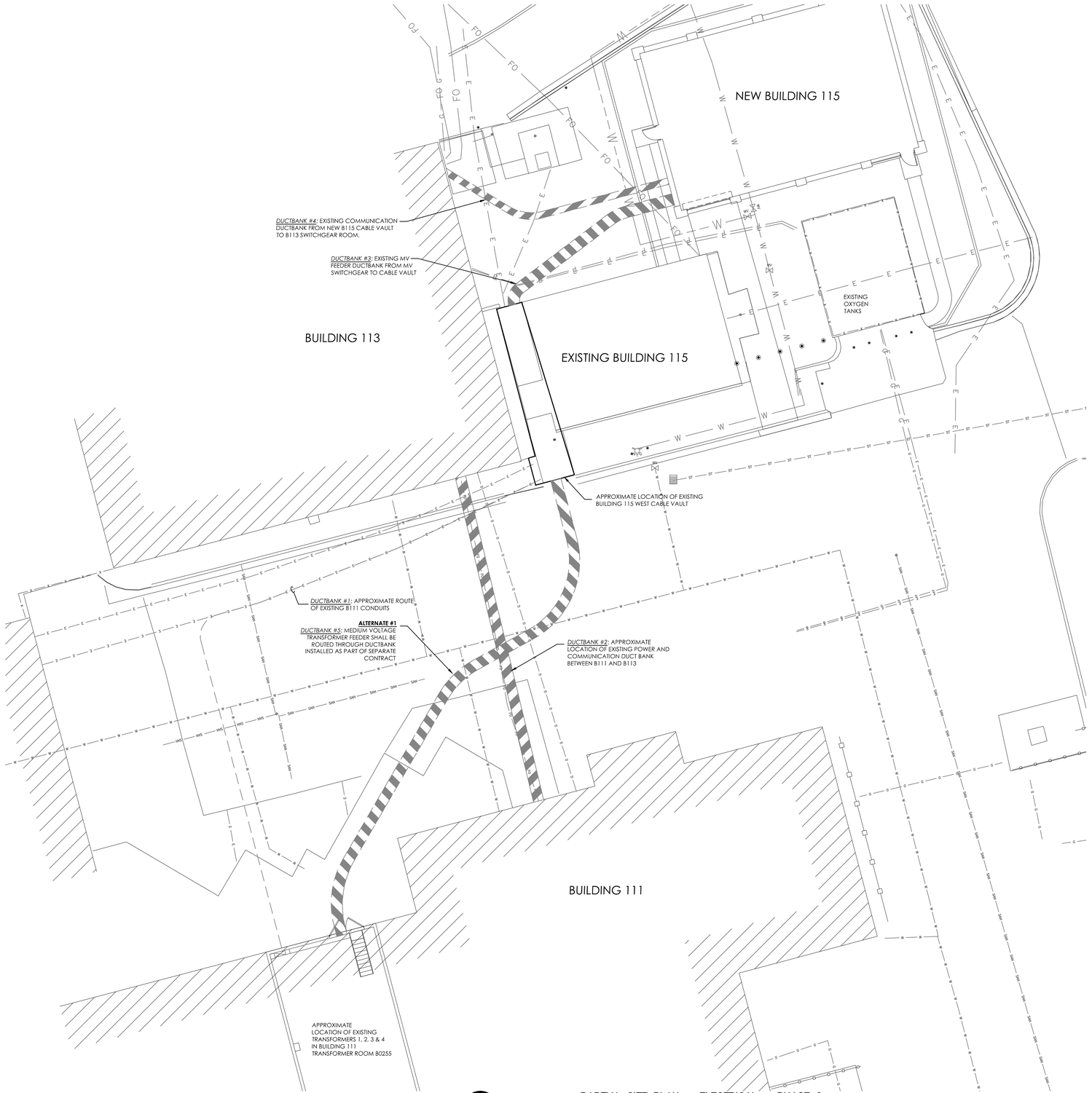
100% CONSTRUCTION DOCUMENTS - 03/02/2015 - ISSUED FOR CONSTRUCTION

E000 Electrical Symbols & Abbreviations.dwg

8/26/2014

Z:\2014 Projects\Bancroft\Zablocki VA B111 XFMR Repalcement\Drawings\Electrical\Design Drawings\E000 Electrical Symbols & Abbreviations.dwg 9-01-15 04:18:09 PM renato.geromel



PARTIAL SITE PLAN – ELECTRICAL – PHASE 0

SCALE: 1"=10'-0"

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Drawing Title: PARTIAL SITE PLAN - ELECTRICAL

Approved: Project Director

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Location: MILWAUKEE, WI

Date: 01-07-2015 | Checked: G+L | Drawn: G+L

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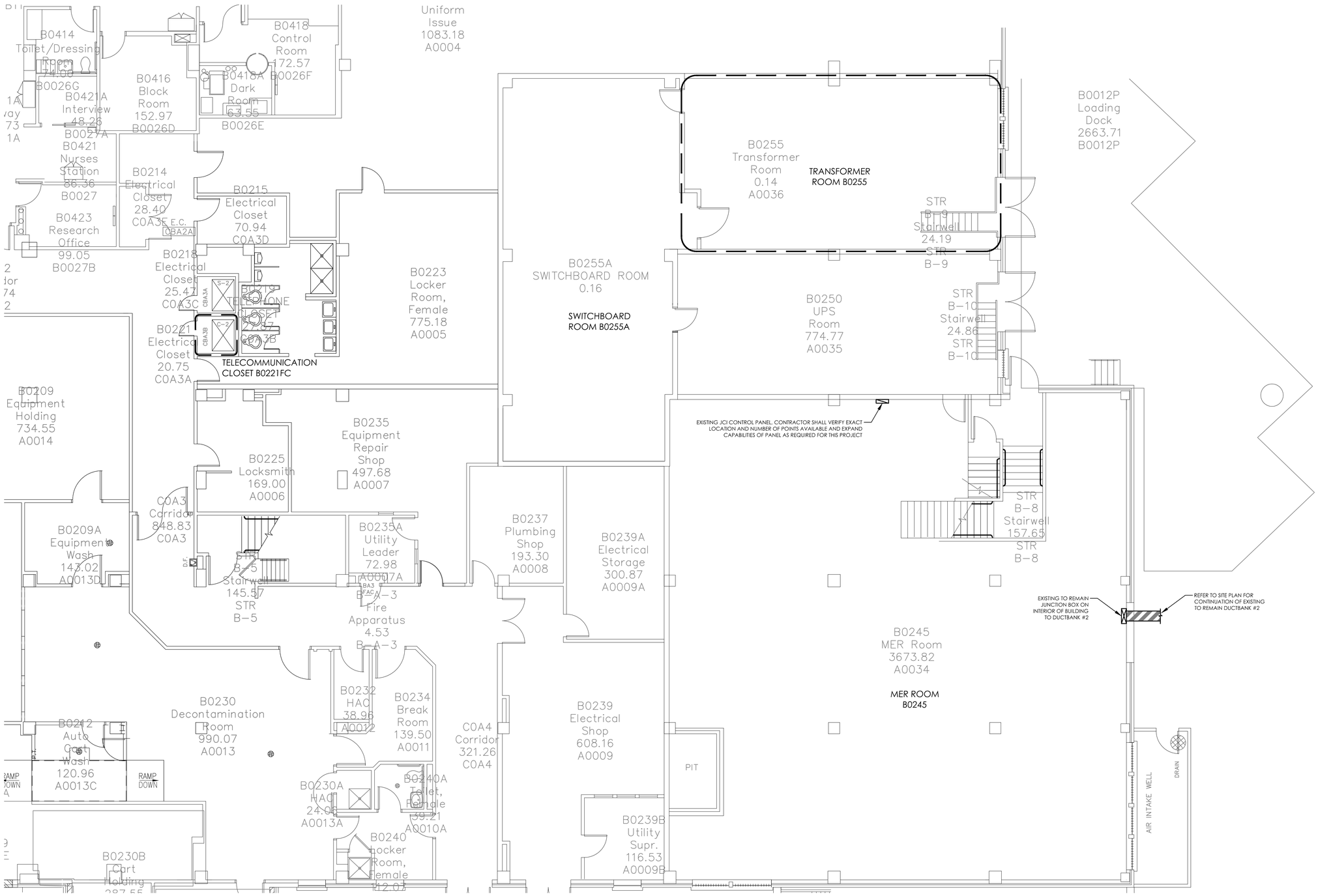
95% DESIGN DEVELOPMENT - 01/07/2015 - NOT FOR CONSTRUCTION



A1 PARTIAL BASEMENT FLOOR PLAN – ELECTRICAL

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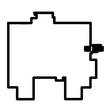

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Jesse Brown Design IDIQ VA69D-14-D-0109
Bancroft-AE Project No. 14-101-002

Drawing Title: PARTIAL BASEMENT FLOOR PLAN - ELECTRICAL

Approved: Project Director

Project Title: CLEMENT J ZABLOCKI CHANGE TRANSFORMERS

Location: MILWAUKEE, WI

Date: 01-07-2015 | Checked: G+L | Drawn: G+L

Project Number: #695-14-140

Building Number: 111

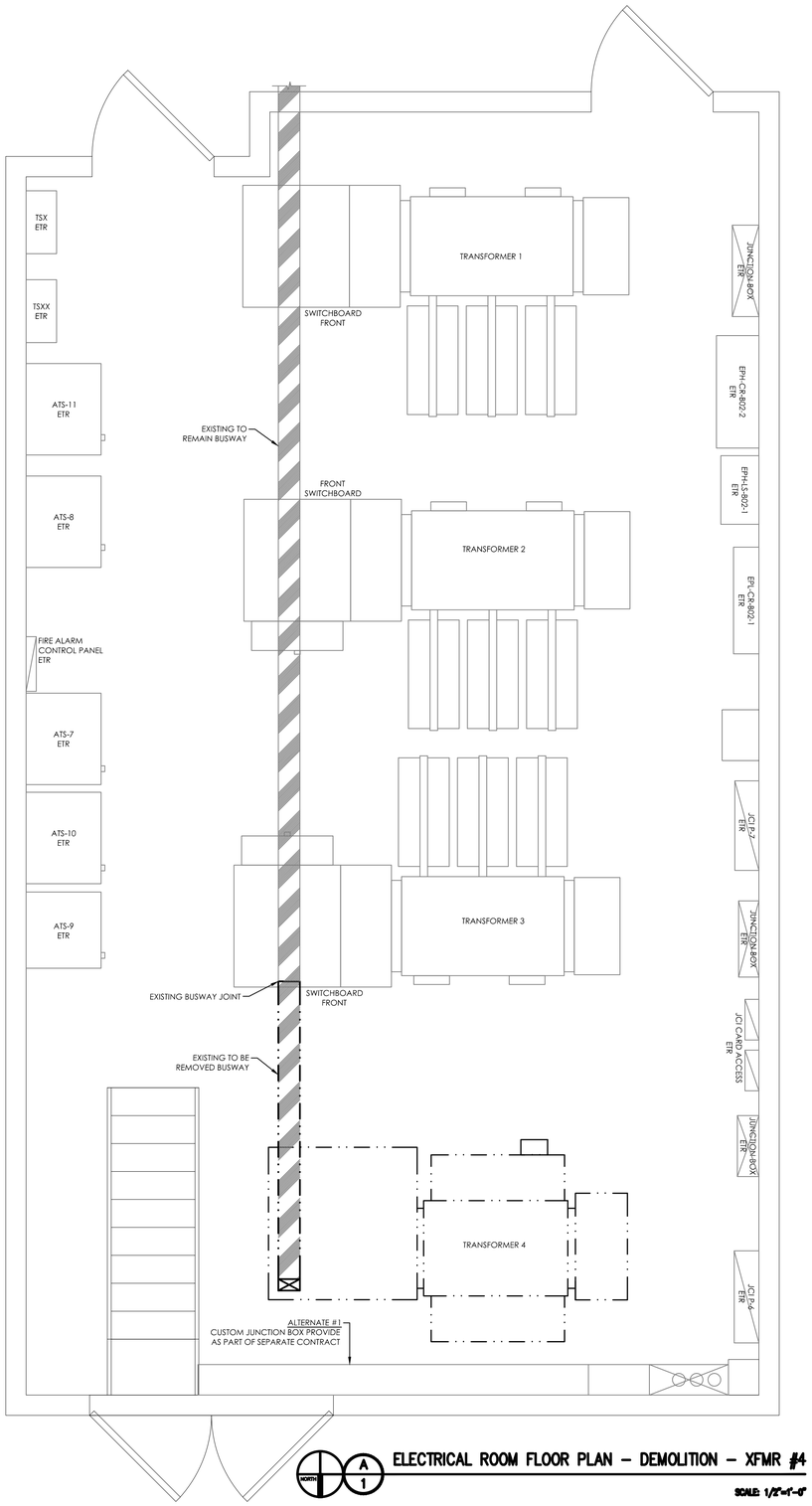
Drawing Number: E100

Office of Construction and Facilities Management

Department of Veterans Affairs

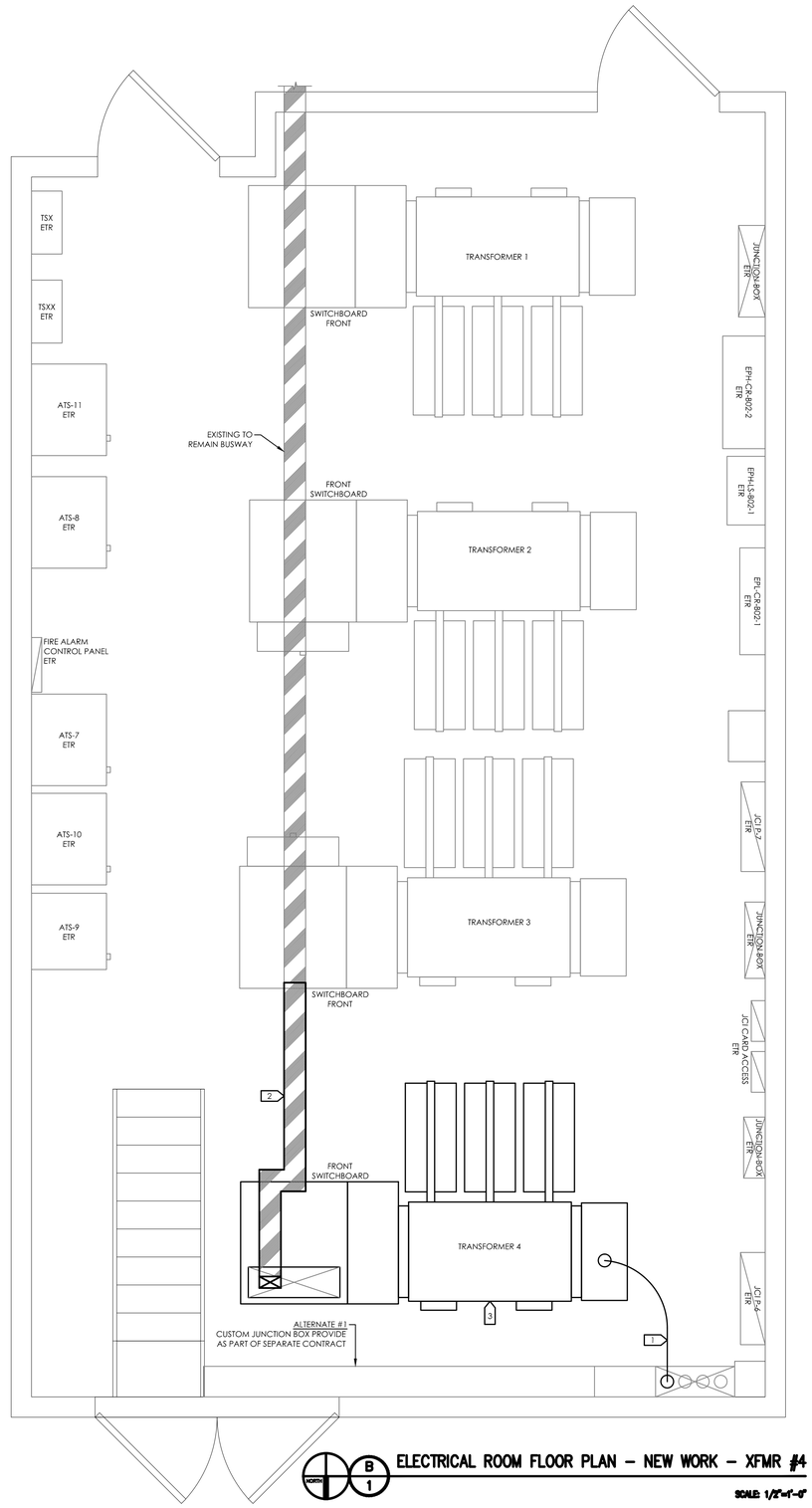
VA FORM 08-6231

95% DESIGN DEVELOPMENT - 01/07/2015 - NOT FOR CONSTRUCTION



A 1 ELECTRICAL ROOM FLOOR PLAN – DEMOLITION – XFMR #4

SCALE: 1/2"=1'-0"



B 1 ELECTRICAL ROOM FLOOR PLAN – NEW WORK – XFMR #4

SCALE: 1/2"=1'-0"

GENERAL DEMOLITION NOTES:

1. ALL ELECTRICAL EQUIPMENT SHOWN ON THIS DEMOLITION PLAN IS "EXISTING TO BE REMOVED" UNLESS NOTED OTHERWISE. IN ADDITION TO REMOVING DEVICES, REMOVE ALL ASSOCIATED ELECTRICAL CIRCUITS BACK TO SOURCE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL ELECTRICAL DEMOLITION REQUIREMENTS.
2. REFER TO DEMOLITION DRAWINGS OF OTHER TRADES. WHERE MOTORS, CONTROL PANELS, AND OTHER LOADS THAT HAVE AN ELECTRICAL CONNECTION ARE BEING REMOVED, INCLUDE THE DISCONNECTION AND REMOVAL OF ASSOCIATED ELECTRICAL FEEDS, CIRCUITS, AND LOOSE CONTROL EQUIPMENT IN THIS CONTRACT.
3. EXISTING TO REMAIN, "ETR", ON THIS DEMOLITION PLAN REFERS TO THE STATUS OF BASIC ELECTRICAL DEVICES. THERE MAY BE SOME WORK REQUIRED IN THESE SPACES INVOLVING BACK-FEEDING EXISTING CIRCUITS OR OTHER MODIFICATIONS. SEE ALL DOCUMENTS THAT MAKE UP THIS CONTRACT FOR THE TOTAL EXTENT OF WORK REQUIRED IN ALL SPACES.
4. EXISTING TO BE REMOVED TRANSFORMER SHALL BE DE-ENERGIZED AND DRAINED OF INSULATING FLUID PRIOR TO CUTTING OFF RADIATORS AND DISMANTLING TO ACCOMMODATE REMOVAL THROUGH EXISTING AISLE.

GENERAL NOTES:

1. INSTALLATION OF NEW TRANSFORMER SHALL NOT TAKE PLACE UNTIL AFTER THE LOAD HAS BEEN BACK FED AND THE EXISTING TRANSFORMER HAS BEEN REMOVED. REFER TO GENERAL PHASING AND OUTAGE REQUIREMENTS ON SHEET E701.4.
2. TRANSFORMER AND SWITCHBOARD SHALL BE GROUNDED TO THE ROOM PERIMETER GROUND BUS AS REQUIRED PER NEC REQUIREMENTS. MINIMUM SIZE OF GROUNDING CONDUCTOR SHALL BE #3/0 BARE COPPER, ROUTED IN SCHEDULE 40 PVC CONDUIT EXCEPT INSIDE OF EQUIPMENT ENCLOSURES. CONNECTIONS SHALL BE IRREVERSIBLE HIGH COMPRESSION CRIMPED TWO HOLE LUGS.

REFERENCED NOTES:

1. CONDUIT SHALL BE ROUTED OVERHEAD AS CLOSE TO CEILING AS POSSIBLE AND SUPPORTED FROM STRUCTURE. ROUTE INDICATED IS FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL VERIFY ACTUAL FEEDER ROUTE.REFER TO ONELINE DIAGRAM E701.4 FOR FEEDER REQUIREMENTS.
2. NEW BUSWAY SHALL MATCH EXISTING EATON BUSWAY. CONTRACTOR RESPONSIBLE FOR VERIFYING EXISTING STYLE. RISERS, ELBOWS AND DIMENSIONS FOR A COMPLETE INSTALLATION. BUSWAY SHALL BE ONSITE PRIOR TO ANY OUTAGE TAKING PLACE. FINAL BUSWAY SWITCHBOARD BUSS CONNECTIONS SHALL BE MADE ON SITE TO MINIMIZE INSTALLATION TIME FRAME OF TRANSFORMER.
3. TRANSFORMER SHALL BE PROVIDED WITH REMOVABLE RADIATORS. TRANSFORMER TANK AND RADIATORS SHALL BE BUILT AND SHIPPED TO SITE TO ALLOW EQUIPMENT TO FIT THROUGH AISLE IN ROOM, NOT TO EXCEED 4'-2". TRANSFORMER AND SWITCHBOARD ASSEMBLY SHALL NOT EXCEED12'-8" IN LENGTH. OVERALL ASSEMBLED TRANSFORMER WIDTH SHALL NOT EXCEED 7'-6". CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ACTUAL DIMENSIONS AND COORDINATING THE PLACEMENT OF TRANSFORMER AND SWITCHBOARD ASSEMBLY. DIMENSIONS PROVIDED DO NOT TAKE INTO ACCOUNT ANY ADDITIONAL SPACE REQUIRED FOR THE RIGGING REQUIRED TO PLACE THE EQUIPMENT.

Revisions:	Date
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95% SUBMITTAL	01/07/2015
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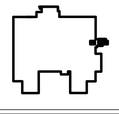
35% SUBMITTAL	9/5/2014

SITE PLAN:



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Jesse Brown Design IDIQ VA69D-14-D-0109
Bancroft-AE Project No. 14-101-002

Drawing Title: TRANSFORMER VAULT FLOOR PLAN - XFMR #4

Approved: Project Director

Project Title: CLEMENT J ZABLOCKI CHANGE TRANSFORMERS

Location: MILWAUKEE, WI

Date: 01-07-2015 | Checked | Drawn

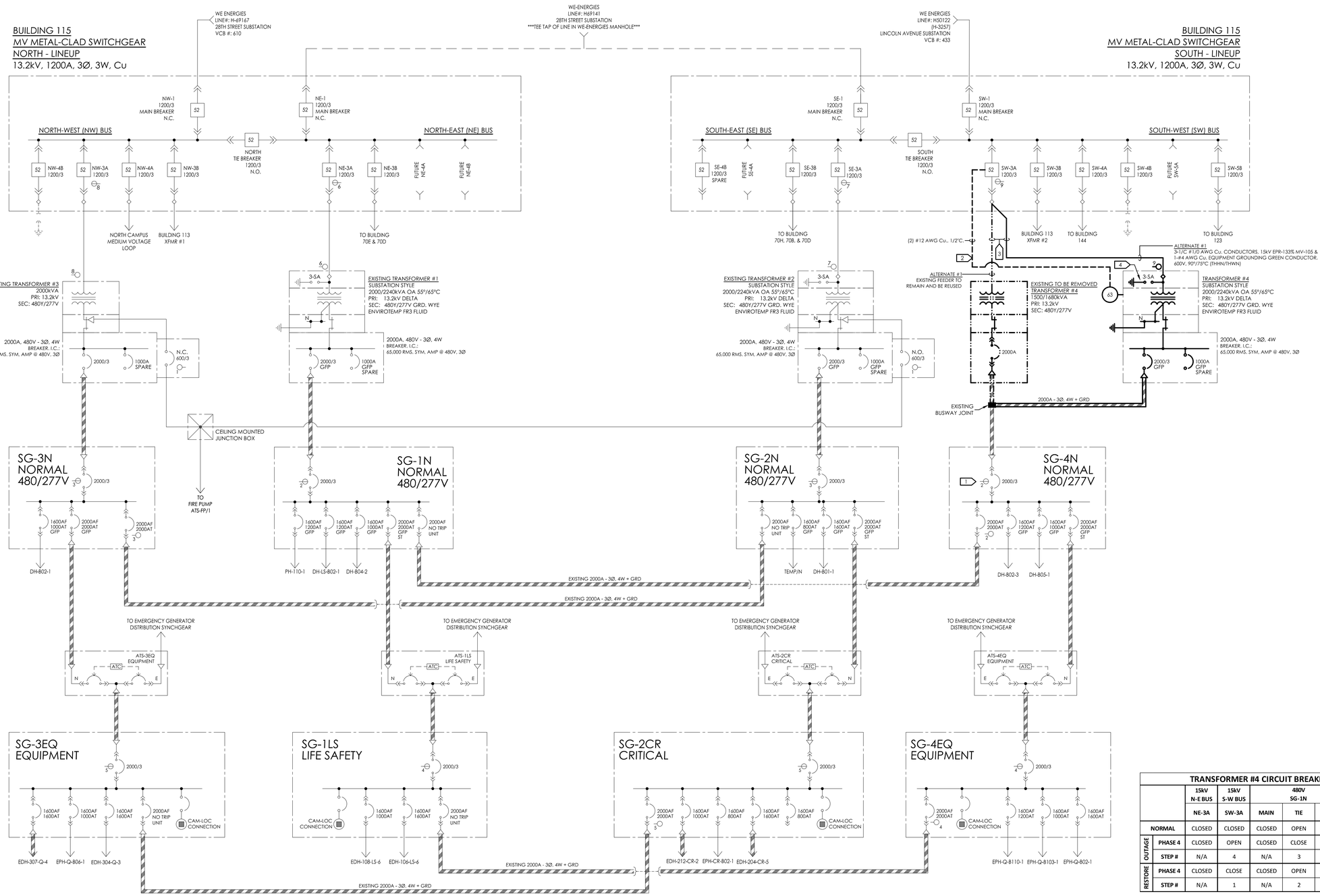
Project Number: #695-14-140

Building Number: 111

Drawing Number: E101.4

Office of Construction and Facilities Management

Department of Veterans Affairs



A/1 **PARTIAL ONELINE POWER DIAGRAM – XFMR 4**

NO SCALE

GENERAL NOTES:

1. INSTALLATION OF NEW TRANSFORMER SHALL NOT TAKE PLACE UNTIL AFTER THE LOAD HAS BEEN BACKFEED AND THE EXISTING TRANSFORMER HAS BEEN REMOVED.
2. AIR TERMINAL CABINET ON THE PRIMARY SIDE OF THE TRANSFORMER SHALL BE KEY INTERLOCKED WITH UPSTREAM MV CIRCUIT BREAKER, TO PREVENT OPENING CABINET WHILE ENERGIZED.

REFERENCED NOTES: (#)

1. GROUND FAULT PROTECTION SHALL BE DISABLED ON MAIN CIRCUIT BREAKER.
2. CONTROL WIRE FOR SUDDEN HIGH PRESSURE RELAY SWITCH SHALL BE ROUTED FROM TRANSFORMER ROOM TO BUILDING 115; THROUGH BUILDING 111, DUCTBANK #2, BUILDING 113 AND DUCTBANK #4. REFER TO SITE PLAN ES101 FOR REFERENCE.
3. ALTERNATE #1 SHALL REUSE EXISTING MV FEEDER IN LIEU OF PROVIDING NEW MV FEEDER. PROVIDE NEW TERMINATIONS AS REQUIRED ON EXISTING FEEDER FOR CONNECTION TO NEW TRANSFORMER.
4. PROVIDE (3) DISTRIBUTION CLASS, 10kV NOMINAL, 8.4kV MCOV, SURGE ARRESTERS.

GENERAL PHASING CONDITIONS:

A. THE CONTRACTOR SHALL REVIEW THE INTENDED PHASING OF WORK AND ASSESS THE IMPACT ON CONSTRUCTABILITY, SAFETY CONCERNS, AND OUTAGE DURATIONS.

B. THE CONTRACTOR SHALL IDENTIFY ANY SITE CONDITIONS OR DESIGN CONDITIONS WHICH MAY NEGATIVELY EFFECT PHASING AND ITS IMPACT. ANY CONCERNS SHALL BE COMMUNICATED IN WRITING AS A REQUEST FOR INFORMATION.

C. THE CONTRACTOR SHALL NOT PERFORM ANY WORK ON ENERGIZED EQUIPMENT AND SHALL BE IN COMPLIANCE WITH NFPA 70E "ELECTRICAL SAFETY IN THE WORKPLACE".

D. ALL ENERGIZED EQUIPMENT AFFECTING THE SAFE INSTALLATION OF CABLES AND CONNECTIONS SHALL BE SHUT-OFF, LOCKED-OUT AND TAGGED IN COMPLIANCE WITH NFPA 70E.

E. ALL WORK REQUIRING SHUT-DOWN OF ENERGIZED EQUIPMENT SHALL BE PERFORMED IN MAXIMUM 4 HOUR OUTAGES.

F. THE CONTRACTOR SHALL ATTEND A PLANNING MEETING WITH THE VA RESIDENT ENGINEER 10 WORKING DAYS IN ADVANCE OF EACH OUTAGE TO DISCUSS AND DOCUMENT THE FOLLOWING:

1. WHAT LOADS WILL BE AFFECTED BY THE OUTAGE.
2. THE ANTICIPATED LENGTH OF EACH OUTAGE.
3. ANY SPECIAL NEEDS FOR TEMPORARY POWER.
4. CONTINGENCY PLANS IF AN UNPLANNED OUTAGE WERE TO OCCUR AT THE SAME TIME AS THE PLANNED OUTAGE.
5. OTHER MAINTENANCE WORK BEING PERFORMED BY THE VA DURING THE OUTAGE AND ITS IMPACT ON THE OUTAGE DURATION.
6. REQUIREMENT FOR BARRIERS, SIGNAGE AND PUBLIC SAFETY.

H. THE CONTRACTOR SHALL ATTEND A FINAL PLANNING MEETING THE MORNING OF THE OUTAGE TO CONFIRM ALL ITEMS PREVIOUSLY DISCUSSED AND DETERMINE WHETHER ANY CORRECTIONS TO PREVIOUS DECISIONS ARE NECESSARY. CONTRACTOR SHALL NOTIFY OWNER OF ANY EXPECTED CHANGES AT THIS TIME.

I. THE CONTRACTOR SHALL ATTEND AN OUTAGE STATUS MEETING SCHEDULED BY THE VA JUST PRIOR TO THE OUTAGE TO DISCUSS COMMUNICATIONS AND AUTHORIZATIONS AND ANY OTHER SPECIAL NEEDS.

J. THE CONTRACTOR SHALL ASSUME ALL OUTAGES WILL OCCUR AT PREMIUM TIME DURING WEEKENDS AND EVENINGS.

K. OSHA CONFINED SPACE PROCEDURES SHALL BE FOLLOWED WHENEVER WORK IS OCCURRING IN CABLE VAULTS AND MANHOLES.

L. CONTRACTORS SHALL BE RESPONSIBLE FOR LOCK-OUT AND TAG-OUT PROCEDURES FOR THE WORK THEY PERFORM AND SHALL PARTICIPATE IN LOCK OUT AND TAG OUT OF WORK BEING PERFORMED BY THE VA OR WE-ENERGIES WHICH MAY IMPACT THE SAFETY OF THE CONTRACTOR'S EMPLOYEES.

M. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF EXISTING EQUIPMENT AS SHOWN ON PLANS.

BUILDING 111 TRANSFORMER #4 OUTAGE

1 CONTRACTOR SHALL ASSIST VA PERSONNEL IN PERFORMING PROCEDURE TO FEED SG-4N SWITCHGEAR THROUGH TIE CIRCUIT BREAKERS, LOCATED IN SG-1N AND SG-4N. LOCK-OUT AND TAG-OUT MAIN CIRCUIT BREAKER IN SG-4N. REFER TO OUTAGE STEPS 1-3 IN CIRCUIT BREAKER POSITION CHART.

2 OPEN AND RACK-OUT EXISTING FEEDER CIRCUIT BREAKER IN BUILDING 115 , LOCK-OUT AND TAG-OUT. REFER TO OUTAGE STEP 4 IN CIRCUIT BREAKER POSITION CHART.

3 REMOVE EXISTING 15 kV FEEDER FROM PRIMARY SIDE OF TRANSFORMER, TO THE EXISTING SWITCHGEAR IN BUILDING 115.

4 REMOVE EXISTING TRANSFORMER #4 FROM BUILDING 111.

5 PREP SITE FOR NEW TRANSFORMER INSTALLATION.

6 PROVIDE NEW 15 kV FEEDER FROM PRIMARY SIDE OF TRANSFORMER, TO THE EXISTING SWITCHGEAR IN BUILDING 115.

7 INSTALL NEW TRANSFORMER #4 AND ASSOCIATED EQUIPMENT.

8 PERFORM ACCEPTANCE TEST ON NEW TRANSFORMER #4 AND NEW FEEDER.

9 CLOSE EXISTING FEEDER CIRCUIT BREAKER IN BUILDING 115. REFER TO RESTORE STEP 1 IN CIRCUIT BREAKER POSITION CHART.

10 PERFORM PROCEDURE TO RETURN SG-4N SWITCHGEAR TO NORMAL OPERATION. REFER TO RESTORE STEPS 2-4 IN CIRCUIT BREAKER POSITION CHART.

TRANSFORMER #4 CIRCUIT BREAKER POSITION CHART

		15kV N-E BUS	15kV S-W BUS	480V SG-1N			480V SG-4N		
		NE-3A	SW-3A	MAIN	TIE	ATS	MAIN	TIE	ATS
NORMAL		CLOSED	CLOSED	CLOSED	OPEN	CLOSED	CLOSED	OPEN	CLOSED
OUTAGE	PHASE 4	CLOSED	OPEN	CLOSED	CLOSE	CLOSED	OPEN	CLOSE	CLOSED
	STEP #	N/A	4	N/A	3	N/A	2	1	N/A
RESTORE	PHASE 4	CLOSED	CLOSE	CLOSED	OPEN	CLOSED	CLOSE	OPEN	CLOSED
	STEP #	N/A	1	N/A	2	N/A	3	4	N/A

LOAD CALCULATIONS

SG-1N = 533 A

SG-4N = 697 A

TOTAL LOAD ON SG-1N = 1230 A *

* LOAD REPRESENTS THE AVERAGE BETWEEN 9/16/2014 & 10/16/2014, CONTRACOTR SHALL BE RESPONSIBLE FOR VERIFYING LOAD PRIOR TO REPLACEMENT OF TRASNFORMER.

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95% SUBMITTAL	01/07/2015
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Revisions:	Date

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Jesse Brown Design IDIQ VA69D-14-D-0109
Bancroft-AE Project No. 14-101-002

Drawing Title: PARTIAL ONELINE DIAGRAM - XFMR 4

Approved: Project Director

Project Title: CLEMENT J ZABLOCKI CHANGE TRANSFORMERS

Location: MILWAUKEE, WI

Date: 01-07-2015 | Checked: G+L | Drawn: G+L

Project Number: #695-14-140

Building Number: 111

Drawing Number: E701.4

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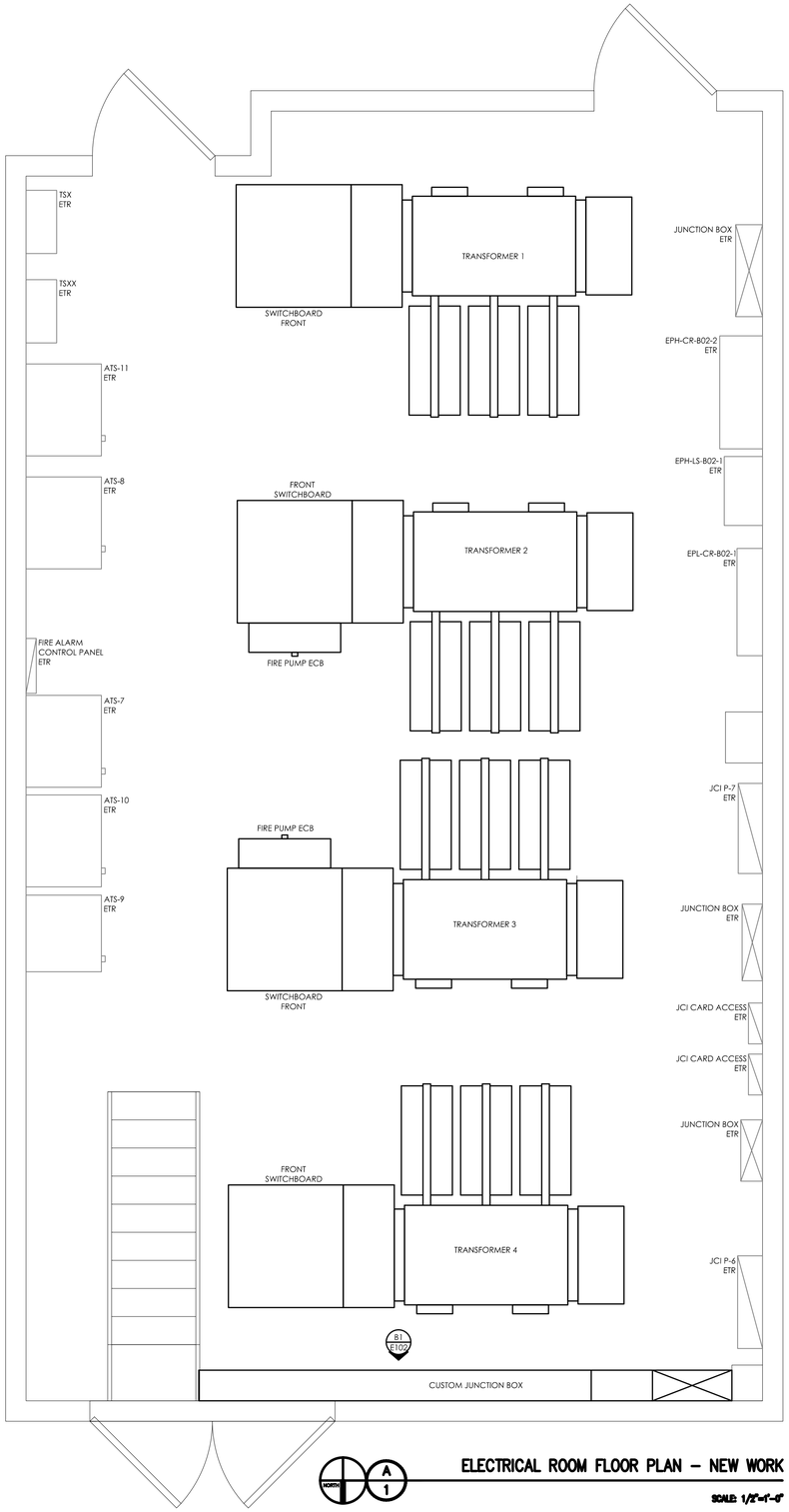
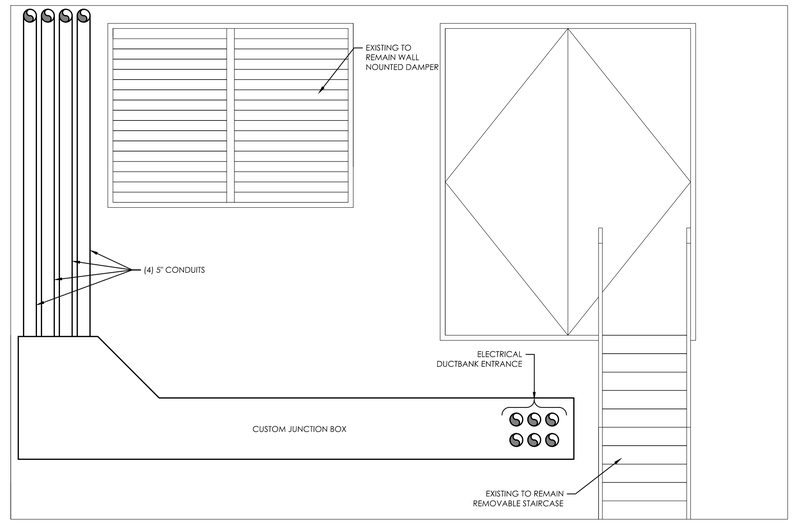


ELECTRICAL ROOM FLOOR PLAN – NEW WORK

SCALE: 1/2"=1'-0"



ELECTRICAL ROOM FLOOR PLAN – NEW WORK

SCALE: 1/2"=1'-0"

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Drawing Title	TRANSFORMER VAULT FLOOR PLAN - FINAL TRANSFORMER LAYOUT
Approved: Project Director	
Project Title	CLEMENT J ZABLOCKI CHANGE TRANSFORMERS
Location	MILWAUKEE, WI
Date	01-07-2015
Checked	G+L
Drawn	G+L
Project Number	#695-14-140
Building Number	111
Drawing Number	E102

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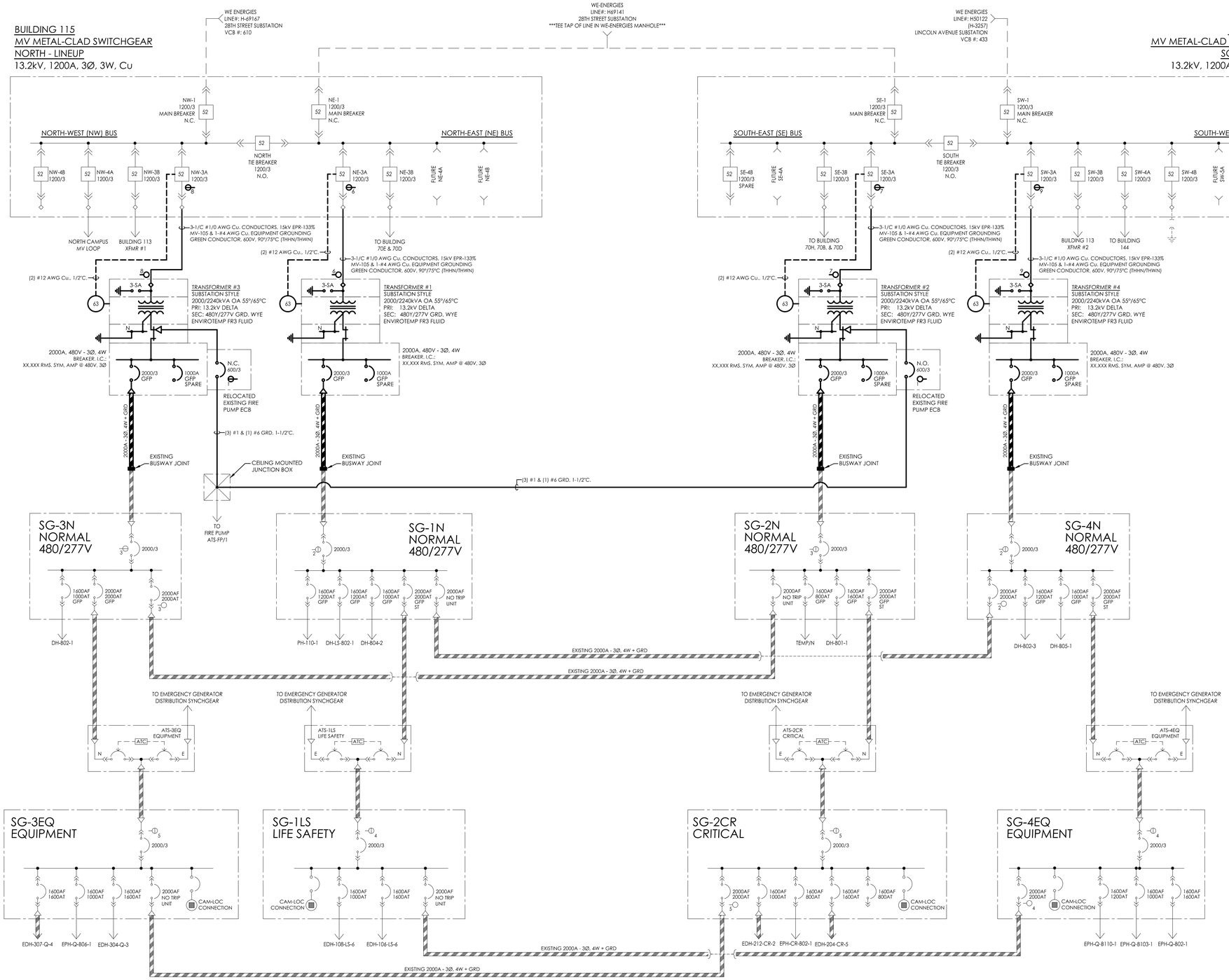

A PARTIAL ONELINE POWER DIAGRAM – NEW WORK

NO SCALE

DRAWING ISSUED FOR INFORMATION PURPOSES ONLY

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Checked: G+L
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Project Number: #695-14-140
Building Number: 111
Drawing Number: E702

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